UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/940,506	08/29/2001	Shin Kameyama	HITA.0100	5251

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Stanley P. Fisher
Reed Smith Hazel & Thomas LLP
Suite 1400
3110 Fairview Park Drive
Falls Church, VA   22042-4503

EXAMINER
SHINGLES, KRISTIE D

ART UNIT	PAPER NUMBER
2141	

DATE MAILED: 11/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	09/940,506	KAMEYAMA ET AL.
	Examiner	Art Unit
	Kristie Shingles	2141

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>*29 August 2001*</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>*1-14*</u> is/are pending in the application.

     4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>*1-14*</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>*29 August 2001*</u> is/are: a)☐ accepted or b)☒ objected to by the Examiner.

     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

     a)☒ All   b)☐ Some *   c)☐ None of:

         1.☒ Certified copies of the priority documents have been received.

         2.☐ Certified copies of the priority documents have been received in Application No. _____.

         3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

     * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892) 6

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>*8/29/01*</u>.

4)☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Claims 1-14 are pending.

Drawings

1.   The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: 2, 3, 50, 81, 220, 230, 270, 280, 310, 311, 320, 330, 370, 380, 381 and 810-815.   Corrected drawing sheets, or amendment to the specification to add the reference character(s) in the description, are required in reply to the Office action to avoid abandonment of the application. Any amended replacement-drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

2.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3.   Claims **1, 2** and **5-14** are rejected under 35 U.S.C. 103(a) as being unpatentable over *Krueger et al* (USPN 6,247,041) in view of *Dukach et al* (USPN 6,609,159).

a.   Per claims **1, 12** and **14** *Krueger et al* teach a data transfer method for a data processing system which allows both processes to be executed in a first data processor and in a second data processor to communicate with each other by direct data transfer between their user-spaces, wherein communication via a first connection between a first process in the first data processor and a second process in the second data processor is taken over by a second connection between a third process in the first data processor and the second process to continue the communication;

• the method comprising: a first step in which the first process and the second process intermit the communication via the first connection (Fig.2, 3 and col.3 line 66-col.4 line 64; user process—second process—on a computer is connected and in communication with the processes—first processes—on other nodes of the network);

• a second step in which a second connection is newly established between the third process and the second process in response to a request from the first process; and (col.5 line 30-col.6 line 43; a third process—child process—is spawned from the first process—the parent process—in response to a request from the user process).

Krueger et al teach the child process inheriting the attributes and communication from the parent process and begins executing the program (col.5 lines 44-62, col.8 lines 25-31 and col.12 lines 1-36), yet fail to distinctly teach a third step in which the second connection takes over the communication from the first connection in response to a request from the first

process to continue the communication. However, *Dukach et al* teach the method of a second process that has an established connection and takes over communication from the first process to form and continue communication via its own socket (col.9 line 53-col.10 line 30, col.16 line 43-col.17 line 30 and col.21 line 57-col.22 line 3).

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to combine the teachings of *Krueger et al* and *Dukach et al* for the purpose of allowing the child (third) process to off-load the processing duties from the parent (first) process by forming its own socket communication via another non-interfering connection/interface because it would aid in load balancing and increasing the processing speed.

b.   Per claim **2**, *Krueger et al* teach the data transfer method as defined in claim 1, wherein the third process is created by a process creating function (col.6 lines 21-25; the operating system is capable of creating the child process).

c.   Per claim **5**, *Dukach et al* teach the data transfer method as defined in claim 1, wherein the second step includes a procedure for either the second process or the third process or both to report establishment of the second connection to the first process (col.10 lines 13-65 and col.20 lines 35-63; child/third processes are capable of sending accept messages to the first process to indicate the establishment and preparation of the socket connection to receive data).

d.   Per claim **6**, *Krueger et al* teach the data transfer method as defined in claim 1, wherein issuance of a request for establishment of the second connection at the second step is triggered by occurrence of an expected event in the first process (Abstract and col.5 lines 30-35; user process makes a system call and identifies the node with the system resource for the

operating system to create a child process from the parent process, the system call and identification step is an expected event that triggers the second step).

      e.   Per claim **7**, *Krueger et al* teach the data transfer method as defined in claim 1, wherein issuance of a request for establishment of the second connection at the second step is triggered by occurrence of an unexpected event in the first process (Abstract and col.5 lines 21-43; the second step can be triggered by a user process request, which is an unexpected event).

      f.   Per claim **8**, *Dukach et al* teach the data transfer method as defined in claim 1, wherein the first process detects and memorizes occurrence of data reception in that process before the establishment of the second connection (col.9 lines 26-43, col.11 lines 13-35, col.16 line 50-col.17 line 9; the multi-processors comprise a library and memory associated with the process before the new process is formed and detects the occurrence of data via the listen socket mechanism).

      g.   Per claim **9**, *Dukach et al* teach the data transfer method as defined in claim 1, wherein, when the first process detects occurrence of reception of data in that process before the establishment of the second connection, it issues a report of the detection to the third process (col.9 line 26-col.10 line 7, col.10 lines 13-65, col.11 lines 13-35 and col.16 lines 43-53; first process makes detection through use of the socket listen feature before the second connection is established and then notifies the child/third process of the detection with the port number and file descriptor of the socket, while information from the first process is copied to the child/third process).

      h.   Claim **10** is substantially similar to claim 9 and is therefore rejected under the same basis.

i.   Per claim **11,** *Dukach et al* teach the data transfer method as defined in claim 1,

wherein the first connection is turned off after the establishment of the second connection (col.13

lines 6-55; after the second connection is made with the back-end server the first connection

from the front end server is closed and will cease involvement with the client's connection).

j.   Per claim **13,** *Dukach et al* teach the data transfer method as defined in claim 1,

wherein the method is implemented by an emulation library programmed so as to emulate the

operation for socket communication and, communication can be made by executing the

emulation library in the first and second data processors respectively, without the need for a

change in user programs for socket communication to be executed by the first and second data

processors respectively (col.8 lines 15-65, col.10 lines 13-65 and col.13 lines 25-38;

communication can be made from executing the file descriptor of a socket within the interposed

library linked to the front-end server and back-end server without need for user program

changes).

4.   Claims **3** and **4** are rejected under 35 U.S.C. 103(a) as being unpatentable over *Krueger et*

al and *Dukach et al* in view of *Lurndal* (USPN 6,424,988).

a.   Per claim **3,** *Krueger et al* and *Dukach et al* teach the method of claim 1 as

applied above, yet fail to explicitly teach the data transfer method as defined in claim 1, wherein

the first step includes: a procedure for the first process to issue a request for intermission of data

transmission to the second process; and a procedure for the second process to intermit data

transfer to the first process in response to the request and, upon completion of intermission,

issues a report of completion of intermission to the first process. However, *Lurndal* teaches a

first process issuing a slot request to a second process, the second process receives the request

and responds by allocating the appropriate slot requested by the first process, the second process

then returns a successful reply message indicative of a completion of intermission message to the

first process (col.11 line 66-col.12 line 53).

It would have been obvious to one of ordinary skill in the art at the time the

invention was made to combine the teachings of *Krueger et al, Dukach et al* and *Lurndal* to

institute a request-respond-and-reply correspondence between the first and second processes

because it would assure and acknowledge the integrity of the intermission communication—that

requests are adequately processed, transferred and fulfilled in an efficient manner.

b.   Per claim **4**, *Dukach et al* teach the data transfer method as defined in claim 3,

wherein the first process memorizes the existence of operation for data reception after it requests

the second process to intermit data transfer; and after it receives the report of completion of

intermission, it copies the data received by the operation for data reception to the third process

(col.9 line 52-col.10 line 11 and col.16 lines 43-63; with the emulation of the fork procedure, the

child process is identical to its parent—the parent process thus stores data and with the creation

of a separate process space for the child, it copies all of its variable, data structures and file

descriptors to pipes and network communications).

Conclusion

5.   The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure.

a.   *Gans et al* (USPN 6,216,127) disclose a method and apparatus for processing electronic mail in parallel.

b.   *Hinsley* (USPN 5,930,511) disclose an operating system for use with computer networks incorporating one or more data processors linked together for parallel processing and incorporating improved dynamic binding and/or load-sharing techniques.

c.   *Jones et al* (USPN 6,430,164) disclose communications involving disparate protocol network/bus and device subsystems.

d.   *Lim* (USPN 6,650,342) disclose a method for operating network management system in a graphic user interface environment and network management system.

e.   *Lurndal* (USPN 6,393,459) disclose a multicomputer with distributed directory and operating system.

f.   *Oberhauser et al* (USPN 6,314,567) disclose an apparatus and method for transferring state data when performing on-line replacement of a running program code and data.

g.   *Stapleton* (USPN 6,167,363) disclose a design for a simulation module using an object-oriented programming language.

6.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kristie Shingles whose telephone number is 571-272-3888. The examiner can normally be reached on Monday-Friday 8:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rupal Dharia can be reached on 571-272-3880. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).
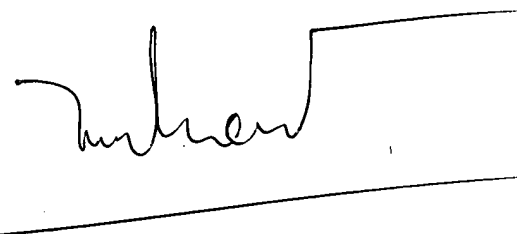
Kristie Shingles
Examiner
Art Unit 2141

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LE HIEN LUU
PRIMARY EXAMINER